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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,453	09/12/2001	Sudeep Bhoja	BEAR-P013	7526
7590 12/09/2004 WAGNER, MURABITO & HAO LLP TWO NORTH MARKET STREET THIRD FLOOR SAN JOSE, CA 95113			EXAMINER CAO, CHUN	
			ART UNIT 2115	PAPER NUMBER

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/954,453	BHOJA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Chun Cao	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-24 are presented for examination.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title is imprecise.

### ***Drawings***

3. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: In figure 5, "signal 18", "the resulting signal 20" and "the circuit 200". Due to the number of drawings objection, the examiner has provided a number of examples of the drawings deficiencies in the above objection(s), however, the list of objection(s) may not be all inclusive. Applicant should refer to these objection(s) as examples of deficiencies and should make all the necessary corrections to eliminate the objection and place the drawings in a proper format. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

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application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "the threshold value" in line 6 and "the second mean" in line 8. There are insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitations "the quantized output" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 2-6 are rejected because they incorporate the deficiencies of claim 1.

Claim 7 recites the limitations "the value" in line 5 and "the new reference threshold value" in line 8. There are insufficient antecedent basis for this limitation in the claim.

Claims 8-13 are rejected because they incorporate the deficiencies of claim 7.

Claim 14 recites the limitations " the wandering interval" in lines 7-8, "the value of the second signal" in line 13, "the value of the first signal" in line 15, "the value of the third signal" in line 17 and "the result" in line 19. There are insufficient antecedent basis for this limitation in the claim.

Claims 15-24 are rejected because they incorporate the deficiencies of claim 14.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Lai (Lai), U.S. patent no. 6,526,112.

As per claim 1, Lai discloses a phase locked loop having a binary quantized phase detector [fig. 4, col. 3, line 22], comprising:

a first means for storing a reference threshold value [initial value of input of phase detector 42, fig. 42];

a comparator [phase detector 42] having a first input for receiving a first input signal and a second input for receiving the reference threshold value, the comparator comparing the first input signal with the reference threshold value to generate an output [fig. 4; col. 3, lines 10-27]; and

in a set threshold block [44, 46, fig. 4], comprising:

an integrator [44, fig. 4], coupled to a second means, for locating a cross point [the center frequency  $f_0$ ] in a data-eye diagram of data sequence, having an input for receiving the output from the comparator and an output for generating a new threshold value [col. 1, lines 57-67; col. 3, lines 10-27].

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2-5 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai (Lai), U.S. patent no. 6,526,112 in view of Otani et al. (Otani), U.S. patent no. 4,853,642.

As per claim 2, Lai does not explicitly disclose that the comparator produces outputs whose average value is not 0.

Otani discloses that a comparator produces outputs whose average value is not 0 [col.3, lines 50-67].

It would have been obvious to one of ordinary skill in the art at time the invention to combine the teachings of Lai and Otani because they are both directed to a phase locked loop system, and the specify teachings of Otani stated above would provide an reliable means of comparing data value of Lai's system.

As per claim 3, Lai discloses that the set threshold block comprising a second means for generating a constant value for level shifting the output [fig. 4; col. 1, lines 57-67; col. 3, lines 10-27], and Otani discloses that the comparator produces an output whose average value is 0 [col. 3, lines 50-67].

As per claim 4, Lai discloses that the output of the second means is coupled to the input of the integrator [fig. 4].

As per claim 5, Otani discloses a third means for filtering a quantized output and an output coupled to the integrator [col. 3, lines 1-7, fig. 5].

As to claims 7-13, claims 1-5 basically are the corresponding elements that are carried out the method of operating steps in claims 7-13. Accordingly, claims 7-13 are rejected for the same reason as set forth for claims 1-5.

***Allowable Subject Matter***

11. Claim 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Claims 14-24 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ransijn, US patent no. 6,347,128, discloses an Alexander phase detector with a data eye diagram.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun Cao whose telephone number is 571-272-3664. The examiner can normally be reached on Monday-Friday from 7:30 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is 571-272-2100.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chun Cao

Dec. 3, 2004